

# Photophysical characterization and ion sensing properties of new colorimetric chemosensors based on hydrazones bearing quinoline

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Molecular receptors are chemical species designed to achieve a high degree of complementarity with a selected guest. When synthetic receptors are coupled with certain signaling units, that could change one or more physical properties upon receptor-guest interaction (e.g. color, fluorescence, redox potential), a molecular sensor is obtained [1]. In this field is especially appealing the use of optical outputs such as changes in color and/or fluorescence that allow the use of low-cost and widely available instrumentation. Moreover, in the case of chromogenic chemosensors, a straightforward semi-quantitative and *in situ* “naked-eye” detection is possible and chromo-fluorogenic chemosensors displaying a displacement of the absorption or emission bands are interesting for the development of ratiometric procedures [2].

Hydrazone and quinoline derivatives have been reported to be suitable systems for the optical (colorimetric and fluorimetric) sensing of certain anions and for the recognition of metal cations. Other applications in materials science include molecular switches and OLEDs [3].

Taking into account the above mentioned facts and our interest in the development of optical probes, [3a-b,4] we report herein the synthesis, photophysical characterization and interaction studies toward anions and cations, in ACN, of probes **2a-b** containing hidrazono-quinoline moieties as both binding and signaling subunits. Moreover, selective detection of cyanide was achieved in aqueous mixtures for chemosensor **2a**.



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